My name is Mitch Trachtenberg. I am a volunteer with the Humboldt County Election Transparency Project, but I am speaking only for myself.

For more than a decade, many election integrity advocates have been urging a switch to hand-counting of ballots at the precinct where they are cast.

Behind the call for hand counted ballots is a recognition that every hand count involves more than one person examining each ballot, making it difficult for any one counter to lie or make a mistake without being caught. I believe underneath the call for hand-counting is a more basic call for redundancy -- for a count that is not performed by any one person or machine.

This demand for redundancy is also behind much of the work done on "auditability." It is the desire to enable a second count that is behind California's requirement that a voter verifiable paper audit trail be required from all election counting machines.

The demand for true redundancy is why volunteers in Humboldt County now do a complete independent count of all ballots cast in our county. It is the reason we put all ballot images on line so that anyone is free to count them on their own. It is the reason we have developed free, open-source software to enable these independent counts.

It is not sufficient for elections officials to merely copy the numbers reported to them from a machine, without any way of verifying their machines' correctness. I believe the simplest way to ensure that any machine is reporting correct results is simply to use two different machines, from different sources, with different software, to act as checks on one another. Ideally, these machines should use software that can be checked by any member of the public. Ideally, such software should not rely on any per-election templates, which could potentially change the software's behavior from one election to another.

I have been working for the past year on a new generation of free and open source software to enable such backup checks. The software I am developing does not need to be provided with per-election templates; it reads all election-specific information directly off ballot images, which it receives from common, off-the-shelf scanning equipment. It is written in the open source language Python, runs on the open source operating system Linux, uses open source optical character recognition to read ballots, and can interface with open source database systems such as MySQL or PostgreSQL.

This is not a technical challenge. With off the shelf scanners and computers that would cost counties less than $4,000 per precinct, and using precinct judges or other volunteers to feed ballots into these scanners, it would be possible to scan and count every precinct's ballots a second time, directly at the precincts, within one hour of the close of polls. This would be, in essence, an "audit" of 100% of cast ballots. It would go far to restore complete trust in the integrity of our elections.

Let me conclude by thanking Secretary Bowen and her staff for their willingness to insist on auditability in elections equipment, and for their encouragement of all those who are pursuing election integrity. I believe redundant counting at the precinct is the next step towards reaching that goal.

Thank you.

Mitch Trachtenberg
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